

IN THE CLAIMS:

- 1 1. (CURRENTLY AMENDED) A method for performing a scheduling assist function,
2 the method comprising the steps of:
3 receiving a request to schedule an event;
4 calculating an expiration time associated with the event using information con-
5 | tained in the request, the information including a byte length and an inverted rate, the in-
6 | formation describing an output channel;
7 | determining if conditions are met to issue a notification; ~~the conditions at least~~
8 | including that the expiration time has been reached; and
9 issuing a notification if conditions are met.
- 1 2. (CANCELLED)
- 1 | 3. (CURRENTLY AMENDED) The method of claim 2 1 wherein the step of calculating
2 | an expiration time using information contained in the request further comprises the steps
3 | of:
4 multiplying the byte length by the inverted rate; and
5 adding a current time if the event is idle otherwise adding an old expiration time.
- 1 4. (ORIGINAL) The method of claim 1 wherein the step of determining if conditions are
2 met to issue a notification further comprises the steps of:
3 (a) comparing a current time to an expiration time; and
4 (b) concluding the conditions are met to issue a notification if the expiration time
5 is less than OR equal to the current time.
- 1 5. (ORIGINAL) The method of claim 4 further comprising before step (a) the steps of:

2 selecting an event table entry from a plurality of event table entries in an event
3 table; and
4 selecting the expiration time from a plurality of expiration times contained in the
5 selected event table entry.

1 6. (ORIGINAL) The method of claim 5 wherein the step of selecting an event table from
2 a plurality of event table entries in an event table further comprises the step of:
3 selecting the event table entry using a scanning table.

1 7. (ORIGINAL) The method of claim 4 further comprising after step (a) the steps of:
2 determining if an output command queue associated with the event is above a
3 threshold; and
4 performing step (b) if the output command queue is above the threshold.

1 8. (ORIGINAL) The method of claim 4 further comprising after step (a) the steps of:
2 determining if a flow bit associated with the event indicates busy; and
3 performing step (b) if the flow bit does not indicate busy.

1 9. (ORIGINAL) The method of claim 4 further comprising after step (a) the steps of:
2 determining if a notification queue can receive a notification; and
3 performing step (b) if the notification queue can receive a notification.

1 10. (ORIGINAL) The method of claim 1 further comprising the step of:
2 updating status information associated with the event.

1 11. (ORIGINAL) The method of claim 1 wherein the step of determining if conditions
2 are met to issue a notification further comprises the steps of:
3 (a) comparing a current time to an expiration time minus a notification threshold;
4 and

(b) concluding the conditions are met to issue a notification if the expiration time minus the notification threshold is less than OR equal to the current time.

12. (CURRENTLY AMENDED) A computer readable medium containing executable instructions for performing ~~the method recited in claim 1~~ a scheduling assist function, the executable program instructions for:

receiving a request to schedule an event;

calculating an expiration time associated with the event using information contained in the request, the information including a byte length and an inverted rate, the information describing an output channel;

determining if conditions are met to issue a notification, the conditions at least including that the expiration time has been reached; and

issuing a notification if conditions are met.

13. (CURRENTLY AMENDED) The computer readable medium of claim 12 ~~wherein the information contained in the request comprises a byte length and an inverted rate and~~ further comprising computer executable instructions for performing:

multiplying the byte length by the inverted rate; and

adding a current time if an event is idle otherwise adding an old expiration time.

14. (ORIGINAL) The computer readable medium of claim 12 further comprising computer executable instructions for performing:

(a) comparing a current time to the expiration time; and

(b) concluding conditions are met to issue a notification if the expiration time is less than OR equal to the current time.

15. (CURRENTLY AMENDED) The computer readable medium of claim ~~12~~14 further comprising computer executable instructions before step (a) for performing:

3 selecting an event table entry from a plurality of event table entries in an event
4 table; and

5 selecting the expiration time from a plurality of expiration times contained in the
6 selected event table entry.

1 16. (ORIGINAL) The computer readable medium of claim 15 wherein the step of select-
2 ing an event table from a plurality of event table entries in an event table further compris-
3 ing computer executable instructions for performing:
4 selecting the event table entry using a scanning table.

1 | 17. (CURRENTLY AMENDED) The computer readable medium of claim ~~12~~14 further
2 comprising computer executable instructions for performing after step (a):
3 determining if an output command queue associated with the event is above a
4 threshold; and
5 performing step (b) if the output command queue is above the threshold.

1 | 18. (CURRENTLY AMENDED) The computer readable medium of claim ~~12~~14 further
2 comprising computer executable instructions for performing after step (a):
3 determining if a flow bit associated with the event indicates busy; and
4 performing step (b) if the flow bit does not indicate busy.

1 | 19. (CURRENTLY AMENDED) The computer readable medium of claim ~~12~~14 further
2 comprising computer executable instructions for performing after step (a):
3 determining if a notification queue can receive a notification; and
4 performing step (b) if the notification queue can receive a notification.

1 20. (CURRENTLY AMENDED) An apparatus configured to perform a scheduling assist
2 function the apparatus comprising:
3 means for receiving a request to schedule an event;

4 means for calculating an expiration time associated with the event using informa-
5 tion contained in the request, the information including a byte length and an inverted rate;
6 means for determining if conditions are met to issue a notification; and
7 means for issuing a notification if conditions are met to issue a notification.

1 21. (CANCELLED)

1 22. (ORIGINAL) The apparatus of claim 20 wherein the means for calculating an expira-
2 tion time using information contained in the request further comprises:

3 means for multiplying the byte length by the inverted rate; and
4 means for adding an old expiration time if an event is idle otherwise adding a cur-
5 rent time.

1 23. (ORIGINAL) The apparatus of claim 20 wherein the means for determining if condi-
2 tions are met to issue a notification further comprises:

3 means for comparing a current time to the expiration time; and
4 means for concluding conditions are met to issue a notification if the expiration
5 time is less than OR equal to the current time.

1 24. (ORIGINAL) The apparatus of claim 23 further comprising:

2 means for selecting an event table entry from a plurality of event table entries in
3 an event table; and
4 means for selecting the expiration time from a plurality of expiration times con-
5 tained in the selected event table entry.

1 25. (ORIGINAL) The apparatus of claim 24 wherein the means for selecting an event
2 table from a plurality of event table entries in an event table further comprises:

3 means for selecting the event table entry using a scanning table.

1 26. (ORIGINAL) The apparatus of claim 23 further comprising:
2 means for determining if an output command queue associated with the event is
3 above a threshold; and
4 means for concluding conditions are met to issue a notification if the expiration
5 time is less than OR equal to the current time and the output command queue is above the
6 threshold.

1 27. (ORIGINAL) The apparatus of claim 23 further comprising:
2 means for determining if a flow bit associated with the event indicates busy; and
3 means for concluding conditions are met to issue a notification if the expiration
4 time is less than OR equal to the current time and the flow bit does not indicate busy.

1 28. (ORIGINAL) The apparatus of claim 23 further comprising:
2 means for determining if a notification queue can receive a notification; and
3 means for concluding conditions are met to issue a notification if the expiration
4 time is less than OR equal to the current time and the notification queue can receive a no-
5 tification.

1 29. (CANCELLED)

1 30. (CANCELLED)

1 31. (CANCELLED)

1 32. (CANCELLED)

1 33. (CANCELLED)

1 34. (CURRENTLY AMENDED) A method for determining when a packet can be de-
2 queued to an output channel, the method comprising the steps of:

3 ~~The method of claim 32 wherein the request comprises:~~

4 scheduling an event associated with the output channel by issuing a request to a
5 scheduling assist function, the request including a byte length associated with the packet;
6 and ~~an inverted a~~ rate associated with the output channel; and
7 receiving a notification when the output channel becomes available.

1 35. (CURRENTLY AMENDED) A method of scheduling an event comprising the
2 steps of:

3 receiving, from a processor, a request to schedule an event, the request containing
4 information describing the characteristics of an output channel associated with the event,
5 the information including a byte length and a rate associated with the output channel;

6 calculating an expiration time associated with the event from the information de-
7 scribing characteristics of the output channel;

8 determining if the output channel associated with the event is available;

9 comparing the expiration time with a current time and determining if the expira-
10 tion time has been reached; and

11 in response to determining that the output channel is available and that the expira-
12 tion time has been reached, issuing a notification to the processor, the notification indi-
13 cating the event is to be serviced.

1 36. (CANCELLED)

1 37. (PREVIOUSLY PRESENTED) The method of claim 36 wherein the step of com-
2 paring further comprises the step of:

3 Selecting an entry in an event table for comparison, each entry containing a plurality
4 of event expiration times associated with events, and comparing the plurality of event ex-
5 piration times to the current time.

1 38. (PREVIOUSLY PRESENTED) The method of claim 35 wherein the step of com-
2 paring further comprises the step of:
3 subtracting a notification threshold from the expiration time prior to comparing.

1 39. (PREVIOUSLY PRESENTED) The method of claim 35 wherein the step of deter-
2 mining further comprises the steps of:
3 determining if a flow bit associated with the event indicates busy; and
4 performing the step of issuing a notification only if the flow bit does not indicate
5 busy.

1 40. (CURRENTLY AMENDED) ~~The method of claim 35 further comprising the steps~~
2 ~~of:~~
3 A method of scheduling an event comprising the steps of:
4 receiving, from a processor, a request to schedule an event, the request containing
5 information describing the characteristics of an output channel associated with the event;
6 calculating an expiration time associated with the event from the information de-
7 scribing characteristics of the output channel;
8 determining if the output channel associated with the event is available;
9 comparing the expiration time with a current time and determining if the expira-
10 tion time has been reached;
11 determining if a notification queue can receive the a notification; and
12 in response to determining that the output channel is available and that the expira-
13 tion time has been reached, performing the step of issuing a the notification only if the
14 notification queue can receive a the notification, the notification indicating the event is to
15 be serviced.

1 41. (CURRENTLY AMENDED) A method for a processor to offload even scheduling,
2 comprising the steps of:

3 issuing a request to schedule an event to a separate scheduling assist function, the
4 request containing information describing an output channel associated with the event,
5 the information including a byte length and a rate associated with the output channel suf-
6 ficient to calculate an expiration time for the event at the output channel; and
7 when the expiration time is less than OR equal to a current time, receiving a notifi-
8 cation from the scheduling assist, the notification indicating the event is to be serviced.

1 42. (CURRENTLY AMENDED) An apparatus for scheduling an event comprising:

2 means for receiving, from a processor, a request to schedule an event, the request
3 containing information describing an output channel associated with the event, the infor-
4 mation including a byte length and a rate associated with the output channel;

5 means for calculating an expiration time associated with the event from the informa-
6 tion describing the output channel;

7 means for determining if the output channel associated with the event is available;

8 means for comparing the expiration time with a current time and determining if the
9 expiration time has been reached; and

10 means for issuing a notification to the processor, the notification indicating the event
11 is to be serviced, in response to determining that the output channel is available and that
12 the expiration time has been reached.

1 43. (CANCELLED)

1 44. (CURRENTLY AMENDED) The apparatus of claim 43 42 further comprising:

2 means for selecting an entry in an event table for comparison, each entry containing
3 a plurality of event expiration times associated with events, and comparing the plurality
4 of event expiration times to the current time.

1 45. (CURRENTLY AMENDED) The apparatus of claim 43 42 further comprising:

2 means for subtracting a notification threshold from the expiration time prior to com-
3 paring.

1 | 46. (CURRENTLY AMENDED) The apparatus of claim 43_42 further comprising:
1 means for determining if a flow bit associated with the event indicates busy; and
2 means for performing the steps of issuing a notification only if the flow bit does not
3 indicate busy.

1 | 47. (CURRENTLY AMENDED) The apparatus of claim 43_42 further comprising:
1 means for determining if a notification queue can receive the notification; and
2 means for performing the steps of issuing a notification only if the notification
3 queue can receive a notification.

1 48. (CURRENTLY AMENDED) A computer readable medium containing executable
2 program instructions for scheduling an event, the executable program instructions com-
3 prising program instructions for:
4 receiving, from a processor, a request to schedule an event, the request containing
5 information describing the characteristics of an output channel associated with the event,
6 the information including a byte length and a rate associated with the output channel;
7 calculating an expiration time associated with the event from the information de-
8 scribing characteristics of the output channel;
9 determining if the output channel associated with the event is available;
10 comparing the expiration time with a current time and determining if the expira-
11 tion time has been reached; and
12 in response to determining that the output channel is available and that the expira-
13 tion time has been reached, issuing a notification to the processor, the notification indi-
14 cating the event is to be serviced.

1 49. (CURRENTLY AMENDED) A computer readable medium containing executable
2 program instructions for enabling a processor to offload event scheduling, the executable
3 program instructions comprising program instructions for:
4 issuing a request to schedule an event to a separate scheduling assist function, the
5 request containing information describing an output channel associated with the event,
6 the information including a byte length and a rate associated with the output channel suf-
7 ficient to calculate an expiration time for the event at the output channel; and
8 when the expiration time is less than OR equal to a current time, receiving a notifi-
9 cation from the scheduling assist, the notification indicating the event is to be serviced.